

REMARKS/ARGUMENTS

Claims 1-12 are pending in this application.

Sakai. Claims 1-12 were rejected over Sakai because of the lack of meaning attributed to the data in the memory of the sensor. The claims have been amended to clarify and provide such meaning. Claim 1 now recites coefficients in said memory "corresponding to a wavelength of said light emitter for use in a first formula for determining oxygen saturation, and a second set of coefficients corresponding to said wavelength of said light emitter for use in a second, different formula for determining oxygen saturation." Thus, the claims are now believed to sufficient define what is stored so that it will not read on just any data.

Sperinde and Sakai. Claims 1-4, 6-9 and 11 were rejected as being unpatentable over the combination of Sperinde and Sakai. Sakai has been cited as teaching the use of a memory in a sensor for storing coefficients. Sperinde discloses computing oxygen saturation levels using different pairs of intensity signals.

Claims 1 and 11 have been amended to clarify that the coefficients are for different formulas for the same wavelength of the same light emitter. Claim 6 has been amended to include a breakpoint, and embodiment of which was formerly a part of canceled claim 8.

Sperinde is referring to using different wavelengths when it refers to different pair of intensity signals. Sperinde does not teach using different formulas for the same sensor element or light emitter, as claimed in the present application. As can be seen from Figure 4 of Sperinde, three different wavelengths are used with three different LEDs 4, 6 and 8. In the disclosure of the invention, col. 5, lines 56-66, Sperinde refers to two different equations (5) and (1) being used depending upon whether the oximeter is in the arterial mode or venous mode. The venous mode is indicated if the oxygen saturation level is less than 40 percent. Referring back to col. 2, lines 27-32, equation (1) refers to a ratio of wavelengths 2 and 3. In contrast, equation (5) in col. 3, line 50, refers to wavelengths 1, 2 and 3.

Sperinde does not show two sets of coefficients for the same light emitter or sensor element (which means the same wavelength). Rather, Sperinde shows different formulas for different light emitters or wavelengths. Additionally, neither Sperinde nor Sakai disclose or

suggest the breakpoint now set forth in claim 6, as amended. Accordingly, the above claims are not shown or suggested by any combination of Sperinde and Sakai.

Kofsky and Sakai. Claims 1-3, 5-8 and 10-12 were rejected as being unpatentable over the combination of Kofsky and Sakai. Sakai shows a memory element in a sensor which stores coefficient values. Kofsky was cited as teaching multiple sets of coefficients for use in calculating oxygen saturation depending on the range of hemoglobin concentration.

Claims 1 and 11 have been amended to clarify that the coefficients are for different formulas for the same wavelength of the same light emitter. Claim 6 has been amended to include a breakpoint, and embodiment of which was formerly a part of canceled claim 8.

As discussed above, Sakai does not show or suggest storing in a sensor memory different sets of coefficients or different formulas for the same wavelength of the same light emitter. Kofsky similarly fails to teach this. It would not be obvious to combine Sakai and Kofsky to achieve the present invention, as now claimed in claims 1 and 11. Additionally, neither Kofsky nor Sakai disclose or suggest the breakpoint now set forth in claim 6, as amended.

Kofsky is an old (1976) invention which discloses using different coefficients for calculating oxygen saturation depending upon the range of concentration, as noted by the Examiner. However, there is no recognition or suggestion in Kofsky that there would be any reason or benefit to put such coefficients in a sensor memory. The assignee of the present invention, subsequent to Kofsky, patented putting resistors in the sensor to identify the particular wavelength, in recognition of the wavelengths varying from sensor to sensor (see Nellcor Patent No. 4,700,708 cited on page 1, line 23 of the Background in the present application). Even with the issuance of the '708 Nellcor patent in 1987, there has been no recognition until the present invention that it would be advantageous to not only use different coefficients for different ranges of values for a light emitter, but to store those in the sensor memory.

These missing elements are not provided by the Sakai patent, which issued in 1990. Again, since 1990 there has been no recognition or suggestion to combine these in any product until the present invention.

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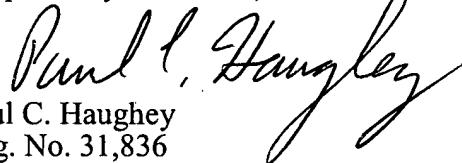
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CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,


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